



OFFICIAL COMMENT

November 14, 2008

#08-764 (Antidegradation)
MaryAnn Stevens
Mail Code 65-40
Rules Section
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46204-2251

Re:

First Notice of Comment Period

LSA Document #08-764

Ms. Stevens.

The Sanitary District of Michigan City has considered the listed alternatives to be considered within the rulemaking and presents the following comments for IDEM's consideration (alternatives may be paraphrased):

Alternative 1: Should antidegradation requirements apply to all of the surface waters of the state or should the current antidegradation requirements only applicable to the Great Lakes Basin be maintained?

Currently, there are two distinctively separate divisions within the State of Indiana in relation to water quality standards, i.e., inside and outside the Great Lakes Basin. The antidegradation standards and water use classifications differ for each area. The antidegradation standards for both areas are summarized in Table 1. It is clear from the side-by-side comparison that the antidegradation standards for each area of the state are not identical. The antidegradation standard for the Great Lakes Basin specifically addresses the three tiers required by the Clean Water Act, i.e., (1) impaired waters, (2) high quality waters and (3) outstanding national resource waters; and they both address thermal degradation. The rest of the State's standard only addresses high quality waters. Both areas' standards consider outstanding state resource waters and exception use waters are addressed outside of the Great Lakes Basin.

The most critical difference is the lack of specific reference to implementation and approval decision procedures outside of the Great Lakes Basin. This lack of formal procedures could potentially open the agency to criticism and concern over the consistency in applying the antidegradation standard. This deficiency in itself is justification for applying antidegradation requirements to the entire State.

However, the Great Lakes Basin implementation procedures for OSRWs, 327 IAC 2-2-11.7, are interim procedures that were questioned during the recent BP AMOCO permit renewal in 2007. As a result, the Governor requested and received an evaluation of all antidegradation procedures, with the recommendation that this specific procedure be clarified for permittees and the general public. As a result, the basin implementation procedures need review and clarification.

Therefore, it is our recommendation that this alternative be considered as part of the current rulemaking provided that any revisions to the current Great Lakes Rules do not conflict with or regulate conditions of NPDES permits nor act as a deterrent to future social and economic growth.

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Table 1: Side-by-Side Comparison of Indiana's Antidegradation Standard Inside and Outside of the Great Lakes Basin

	Inside and Outside of the Great	11 Lanco Dasin
Standard		Outside the Great Lakes Basin
Component	HISHIE HIE CHEAL DONAS COMM	For all waters of the state, existing beneficial uses shall be
Feneral Statement	For all surface waters of the state within the Great Lakes system, existing instream water uses and the level of water quality necessary to protect existing uses shall be maintained and protected. [327 IAC 2-1.5-4(a)]	maintained and protected. No degradation of water quality shall be permitted which would interfere with or become injurious to existing and potential uses. [327 IAC 2-1-2(1)]
mpaired Waters	Where designated uses of the waterbody are impaired, there shall be no lowing of the water quality to the pollutant or pollutants that are causing impairment.	
High Quality Waters	Any surface water of the state within the Great Lakes system whose existing quality for any parameter exceeds the criteria established within this rule shall be considered high quality for that parameter consistent with the definition of high quality water found in this rule; and that quality shall be maintained and protected [327 IAC 2-1,5-4(b)]	All waters whose existing quality exceeds the standards established herein as of February 17, 1977, shall be maintained in their present high quality [327 IAC 2-1-2(2)]
When Lowering Water Quality May Be Considered	unless the commissioner finds, after full satisfaction of intergovernmental coordination and public participation provisions under 327 IAC 5-2-11.3, that allowing lower water quality is necessary and accomodates [sic.] important economic or social development in the area in which the waters are located. In allowing such degradation, the commissioner shall assure water quality adequate to protect existing uses fully, [327 IAC 2-1.5-4(b)]	unless and until it is affirmatively demonstrated to the commissioner that limited degradation of such waters is justifiable on the basis of necessary economic or social factors and will not interfere with or become injurious to any acnoticial uses made of, or presently possible, in such waters. In making a final determination under this subdivision, the commissioner shall give appropriate consideration to public participation and intergovernments coordination. [327 IAC 2-1-2(2)]
Implementation and Decision Procedures	Further, the commissioner shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. The commissioner shall utilize the antidegradation implementation procedures under 327 IAC 5-2-11.3 in determining if a significant lowering of water quality will be allowed. [327 IAC 2-1.5-4(b)]	
Exceptional Use Waters (EUWs)		This subsection establishes surface water quality for exceptional uses. Waters classified for exceptional uses warrant extraordinary protection. Unless criteria are otherwise specified on a case-by-case basis, the quality of all waters designated for exceptional use shall be maintained without degradation. [327 IAC 2-1-6(i)]
Outstanding	From the effective date of this section until the	The fullowing waters of high quality, as defined in subdivision (2), are designated by the board to be an
State Resource Waters (OSRWs)	expiration date of 327 IAC 5-2-11.7, all high quality waters designated under section 19(b) of this rule as an outstanding state resource water shall be maintained and protected in their present high quality without degradation. Upon expiration of 327 IAC 5-2-11.7, all high quality waters designated under section 19(b) of this rule as an outstanding state resource water shall be maintained in their present high quality without degradation, 1327 IAC 2-1.5-4(c)]	subdivision (2), are designated by the board to be all outstanding state resource and shall be maintained in the present high quality without degradation; [327 [AC 2-2(3)]]
Outstanding National Resource Waters (ONRWs)	exceptional recreational or coological significance) shall be maintained and protected in their present high quality without degradation. [327 IAC 2-1.5-4(d)]	Any determination made by the commissioner in
Thermal Degradation	In those cases where the potential lowering of water quality is associated with a thermal discharge, the decision to allow such degradation shall be consistent with Section 316 of the Clean Water Act and 327 IAC 5-7. [327 IAC 2-1.5-4(e)]	Any determination made by the controls that accordance with Section 316 of the Clean Water Act concerning alternative thermal effluent limitations will considered to be consistent with the policies enunciated this section. [327 IAC 2-1-2(4)]

Alternative 2: How should the concept, de minimis lowing of water quality, be defined to facilitate a clear and consistent application and to eliminate further antidegradation review?

In the <u>Water Quality Guidance for the Great Lakes System; Supplementary Information</u>

<u>Document (SID)¹ the background for the concept of classifying an increased loading as de minimis included three criteria in the original proposed Guidance,</u>

1. only non-BCCs will be released as a result of the proposed activity responsible for lowering if water quality;

2. the proposed lowering of water quality uses less that 10 percent of the

available assimilative capacity; and

3. for pollutants contained in 40 CFR 132.2, Table 5, at least ten percent of the total assimilative capacity remains unused following the lowering of water quality.

According to the SID, EPA's intent in including the de minimis test in the proposed Guidance was to recognize that certain activities, although they may result in some lowering of water quality, will not lower water quality to such an extent as to result in a significant lowering of water quality; and thereby providing a means of reducing administrative burden on all parties associated with activities of little or no consequence to the environment.²

However, EPA did not include the de minimis test in the Final Guidance because non-BCCs were not addressed there. Instead, EPA permitted the States of Tribes to address non-BCCs individually as long as any de minimis approach was based on the criteria from the proposed Guidance. Indiana adopted the de minimis test with the Great Lakes System rules and included for both high quality waters, [327 IAC 5-2-11.4], and discharges tributaries of outstanding state resource waters, [327 IAC 2-2-11.7(b)(2)], the following criteria:

The proposed increase in monthly average mass for a non-BCC (proposed monthly average mass – existing permitted monthly average mass) is...

1. less than 10% of the unused loading capacity; and

2. at least 10 % of the total loading capacity remains unused after the lowering of water quality; and

3. for tributaries to OSRWs ONLY, the discharge shall not cause a significant lowering of water quality in the OSRW.

Current Great Lakes Basin rules define total loading capacity for high quality waters and OSRWs that are streams as the product of the applicable water quality criterion times the sum of the existing effluent flow and the stream design flow for the waterbody in the area where the water quality is proposed to be lowered, expressed as a mass rate. For discharges to Lake Michigan, the total loading capacity is defined as the product of the applicable water quality criterion times the sum of the existing affluent flow and approved mixing volume for

² [bid, page 208.

¹ Water Quality Guidance for the Great Lakes System: Supplementary Information Documentation (SID), US EPA, Office of Water, EPA-820-B-95-001, March 1995, p 207

Lake Michigan in the area where water quality is proposed to be lowered, expressed as a mass loading rate. [327 IAC 5-2-11.3(b)(1)(B)(iii)(AA); 327 IAC 5-2-11.7(b)(5)(A)]

Those rules also define unused loading capacity for high quality waters and all OSRWs as the amount of total loading capacity not utilized by the point source and nonpoint source discharges. The unused loading capacity is established at the time the request to lower water quality is considered. [327 IAC 4-2-11.3(b)(1)(B)(iii)(BB); 327 IAC 2-2-11.7(b)(5)(B)]

The problem with the existing language for total loading capacity lies in the use of "existing effluent flow". Instead the more appropriate definition would be the effluent design flow as defined in 327 IAC 5-2-11.4(a)(9). This change would make de minimis calculations consistent with total maximum daily loading and wasteload allocations. In addition, the definition for used loading capacity is unclear.

Thus, the following proposed definitions should be used to determine total loading capacity:

For high quality waters and OSRWs that are streams: total loading capacity is the product of the applicable water quality criterion times the sum of the effluent design flow, as determined by 327 IAC 5-2-11.4(a)(9), and the stream design flow, in accordance with 327 IAC 5-2-11.4(b)(3)(A), for the waterbody in the area where the water quality is proposed to be lowered, expressed as a mass rate.

For Lake Michigan: total loading capacity is the product of the applicable water quality criterion times the sum of the effluent design flow, as determined by 327 IAC 5-2-11.4(a)(9), and the approved mixing volume for Lake Michigan in the area where the water quality is proposed to be lowered, expressed as a mass rate.

The following definition for used loading capacity should be used:

For high quality waters and OSRWs that are streams: the used loading capacity is the sum of the existing mass permit limit for the pollutant of concern plus the product of the representative background concentration just upstream of the proposed new or increased discharge times the stream design flow, in accordance with 327 IAC 5-2-11.4(b)(3)(A), for the waterbody in the area where the water quality is proposed to be lowered, expressed as a mass rate.

For Lake Michigan: the used loading capacity is the sum of the existing mass permit limit for the pollutant of concern plus the product of the representative background concentration outside of the approved mixing volume times the approved mixing volume for Lake Michigan in the area where the water quality is proposed to be lowered, expressed as a mass rate.

De minimis for High Quality Waters: The unused loading capacity for all waterbodies becomes the total loading capacity minus the used loading capacity. Applying the SID guidelines, a proposed or new increase in loading of a non-BCC to high quality waters,

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including tributaries to an OSRW (or EUW), would be considered de minimis as long as all of the following are true:

1. the proposed increase in (or new) mass loading is less that 10% of the unused loading

capacity as calculated above;

2. a minimum of 10% of the total loading capacity remains untouched; and

3. if the receiving waterbody is a tributary to an OSRW (or EUW), then no significant lowering of water quality shall occur in the OSRW (or EUW).

De minimis for OSRWs and EUWs: The next question is "What is considered significant lowering of water quality in an OSRW (or EUW)?" Certainly, OSRWs (or EUWs) should have a higher level of protection than high quality waters.

Therefore, we recommend that for OSRWs (or EUWs) that significant lowering of water quality be defined as when a new or increased loading for a pollutant of concern that exceeds the following criteria be considered a significant lowering of water quality for the OSRW (or EUW);

1. the proposed increase in (or new) mass loading is less that 5% of the unused loading capacity in the OSRW (or EUW); and

2. a minimum of 25% of the total loading capacity for the OSRW (or EUW) remains untouched.

The next question is "What, if anything, should act as a limit for the magnitude of the allowable de minimis lowering of water quality?" That is, as the receiving waterbody volume or design flow increases in relation to the existing and proposed increase in discharge flow, the mass that qualifies as a de minimis increase will, by the mathematics, become larger in magnitude. Should this mass increase have an upper limit?

We contend that the current rules already have an upper limit, depending upon the pollutant of concern and the manner in which the permit limits are applied to the discharge. If the permitted discharge is to a "zero flow" stream, i.e., the design flow for the receiving waterbody is zero or insignificant, then the permit limits are applied to the end-of-the-pipe. Consequently, the acute toxicity permit limit becomes PAV. This is also true when no mixing zone is allowed. Depending whether acute or chronic toxicity, the discharge must meet the following by existing rules:

Outside of Great Lakes Syste	m FAV, in undiluted discharge AAC, outside of zone of initial dilution	<u>Rule</u> 327 IAC 2-1-6(a)(1)(E) 327 IAC 2-1-6(a)(1)(E)
For chronic toxicity:	CCC, outside zone of initial dilution	327, TAC 2-1-6(8)(2)
Inside of Great Lakes System For acute toxicity:	1 FAV, in undiluted discharge CMC, outside of zone of initial dilution	327 IAC 2-1.5-8(b)(1)(E) 327 IAC 2-1.5-8(b)(1)(E)
For chronic roxicity, depending on the applicable criterion:	CCC, HNC, HNV, HCC or HCV, outside zone of initial dilution WC, 30-day average	327 IAC 2-1.5-8(b)(2) 327 IAC 2-1.5-8(b)(2)

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We recommend that the above referenced rules are a reasonable limit to de minimis.

Alternative 3: Should de minimis technology-based effluent limitations (DTBELs), determined from federal effluent guidelines or IDEM's best professional judgment, be used when current rules do not address the pollutant of concern?

The concept of using a BPJ-based DTBEL for as described total phosphorus or ammonia-mitrogen is intriguing but vague.

We propose that IDEM develop a complete list of parameters proposed to be addressed using DTBELs and provide BPJ values and their derivation for review by the workgroup and other interested parties, along with clear examples on how the DTBELs would be applied. In addition, the application of DTBELs cannot conflict with the de minimis calculations discussed above. Finally, DTBELs for municipal permits would have to specify what treatment technologies are associated with the BPJ and if other equivalent technologies would be considered and how.

Alternative 4: Should the rulemaking expand the social and economic justification to include the positive benefits to the area of the discharge as well as the negative impacts?

The SID lists three sequential components to the antidegradation demonstration, with social and economic development being the last.³ The first two are pollution prevention followed by alternative and enhanced treatment. The pollution prevention component is geared towards industrial dischargers, with municipal application through industrial pretreatment programs. The cost-effective pollution prevention component includes, but is not limited to,

- substitution of non-BCC or non-toxic chemicals for BCCs,
- o application of water conservation techniques,
- o waste source reduction within process streams,
- o recycle or reuse of waste byproducts, and
- manufacturing process operational changes.

We believe that this component is considered by pretreatment communities when new industrial users or expansion of existing industrial processes are anticipated.

The second component's objective, i.e. alternative or enhanced treatment analysis, is intended to limit the actual degradation of the high quality water to the greatest extent practical. The analysis incorporates a cost-effective analysis to determine the least costly options for additional treatment with the greatest reduction in the pollutant of concern and proposed degradation. We believe that this process is an inherent component of any existing treatment plant expansion or design for new treatment facilities.

The third component is the social and economic benefit analysis. The SID states, "In determining whether or not a proposed activity will support important social or economic development, Tribes and States should consider the geographic area in which the significant

³ Tbid, page 221.

lowering of water quality will occur, the current or baseline economic condition of the area, the net positive impacts that will result for the proposed activity and the possibility of other development occurring in the area that will result in similar economic and social benefits but will not cause a significant lowering of water quality."

Therefore, the SID already required that the antidegradation demonstration consider the net positive impacts on the geographical area in which the significant lowering of water quality is proposed.

Of equal, if not greater importance, are the detailed demonstration requirements for net positive impacts. We would be concerned that the process could have the potential to become so unyielding that it acts as a deterrent to natural population growth, the growth of a community's tax and employment base, or threatens the implementation of cost-effective solutions to alleviate public health concerns.

Therefore, we recommend that net positive impacts to the social and economic benefits be included in the antidegradation demonstration with emphasis on streamlining the process for natural population growth, encouraging growth for a communities tax base and employment base, or threatens the cost-effective solutions to public health concerns.

Alternative 5: Under IC 13-18-3-2, if a significant lowering of water quality in an OSRW or EUW occurs as a result of new or increased discharge, then the discharger must submit an antidegradation demonstration and support a project that results in an overall improvement of water quality in the watershed of the discharge, or pay a fee, not to exceed \$500,000, based on the cost necessary to reduce the increased pollutant loading to the background concentration.

This change is mandated by law and must be incorporated into the antidegradation implementation procedures throughout the State. The first concern for dischargers to a tributary of an OSRW or EUW is that the project or fee will be assessed without a justified and reproducible evaluation of significant lowering to the OSRW. The second concern is that new or increased loadings required in eliminating a public health concern, whether that loading is a result of natural population growth or a deliberate expansion to replace failing septic or mound systems, will require a project or fee over and above the cost associated with the treatment expansion.

Therefore, we recommend that a significant lowering of water quality to an OSRW or EUW be determined by the 5%/25% rule proposed under Alternative 2. Furthermore, when significant lowering of water quality in an OSRW or EUW is required in eliminating a public health concern, we recommend that the increased discharge from expanded treatment be considered as the water quality enhancement project for the watershed in lieu of a new project or payment of a fee.

Alternative 6: Should the process review the existing conditions and simplify those conditions that trigger an antidegradation evaluation?

⁴ Ibid, page 223.

In the existing rules for the Great Lakes Basin, there are several activities that, by their nature, are assumed not to result in a significant lowering of water quality. There are two reasons for this: first, the activities are addressed in other portions of the rules (e.g. variances), and/or an existing NPDES Permit (general or discharge specific); and two, the activities will not result in a new or increased permit limit.

For high quality waters, these "exemptions" are found in 327 IAC 5-2-11.3(b)(1)(C). For BCCs, there must be a deliberate action that results in an increased or new loading of the BCC, [327 IAC 5-2-11.3(b)(2)].

For outstanding state resource waters (OSRWs); these exemptions" are found in 327 IAC 5-2-11.7(b).

It is important to the operations and maintenance of POTWs that these "exemptions remain intact without additional levels of notification or public participation. To add those components could delay critical responses and result in greater degradation. The NPDES permit and existing rules should be used to the full extent to ensure efficient operations and maintenance of POTWs.

Therefore, we recommend that the triggers for antidegradation demonstration be as follows:

High quality waters	non-BCCs	New or increased permit limit
	BCCs	Deliberate action resulting in a non- domestic increase in loading.
OSRWs (EUWs)	non-BCCs BCCs	New or increased permit limit Deliberate action resulting in any Increase in loading.

Furthermore, we recommend that the "exemptions" be retained from the Great Lakes Basin rules with the NPDES Permit, and/or other applicable existing procedures or rules as the determining factor regarding notification and/or public participation.

Alternative 7: Should the cap and cumulative cap on unused loading capacity change from existing rules?

As stated previously, we recommend the following cap and cumulative cap on unused loading capacity:

For high quality waters and tributaries to OSRWs (or EUWs) the cap for any de minimis lowering of water quality should be limited to 10 % of the unused loading capacity, provided that discharges to tributaries of an OSRW (or EUW) do not result in a significant lowering of water quality in the OSRW (or EUW).

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For OSRWs (or EUWs), we recommend the cap for de minimis lowering of water quality be 5% of the unused loading capacity.

For high quality waters and tributaries to OSRWs (or EUWs), the cumulative cap is 90% (or 10% of the total loading capacity must remain unused). For OSRWs (or EUWs) the cumulative cap is 75% (or 25% of the total loading capacity must remain unused).

For significant lowering of water quality, approved through the antidegradation demonstration process, the cap or cumulative cap cannot exceed the recommended cumulative cap stated above. The individual lowering of water quality should be minimized through the three components of the antidegradation demonstration.

Thank you for the opportunity to provide comments and suggestions for the antidegradation rulemaking.

Sincerely,

Daniel R. Olson Plant Superintendent

Sanitary District of Michigan City

Cc: Alan J. Walus, General Manager